

ST PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE
DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

KNOWLEDGE, ATTITUDE, DESIRE, AND FACTORS ASSOCIATED
WITH LABOR PAIN MANAGEMENT AMONG PREGNANT
WOMEN ATTENDING ANC IN SAINT PAUL'S HOSPITAL
MILLENNIUM MEDICAL COLLEGE

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NOVEMBER 2024

A THESIS REPORT SUBMITTED TO ST PAUL'S HOSPITAL MILLENNIUM
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GYNECOLOGY IN PARTIAL FULLFILLMENT FOR A SPECIALITY
CERTIFICATE IN OBSTETRICS AND GYNECOLOGY

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SUMMARY

BACKGROUND: Labor pain is among the most intense pains women experience during childbirth, with significant implications for both mother and fetus if left untreated. Despite its natural and self-limiting nature, low awareness and negative attitudes toward labor analgesia remain challenges that impact maternal and fetal outcomes. The intensity and perception of labor pain vary among women, influenced by their knowledge and awareness of pain management. This study aims to assess pregnant women's awareness, attitudes, and desire for labor analgesia, along with associated factors, providing valuable insights into improving pain management during childbirth.

OBJECTIVE: To assess the knowledge, attitudes, desire, and associated factors related to labor pain management among pregnant women attending antenatal care at St. Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia, from April to June 2024.

METHODS: An institution-based cross-sectional study was conducted among 417 pregnant women attending antenatal care at St. Paul's Hospital Millennium Medical College from April to June 2024, using simple random sampling. Data were collected through a structured questionnaire using Kobo Toolbox and analyzed using SPSS version 26. Descriptive statistics, including frequencies, means, standard deviations, and percentages, were computed and presented in tables and figures. To examine associations between predictor and outcome variables, binary and multinomial logistic regression analyses were performed. Odds ratios with 95% confidence intervals were calculated to determine the strength of associations, and a p-value of less than 0.05 was considered statistically significant.

RESULTS: A total of 417 pregnant women participated in the study. Only 55 (13.2%) of the participants were aware of labor analgesia. In the multivariate analysis, a significant association was observed between income and awareness of labor analgesia. Women with an income of 5,000 ETB or more were nearly twice as likely to be aware of labor analgesia compared to those earning less than 5,000 ETB (AOR: 1.9, 95% CI: 1.07–23.3). A significant association was found between occupation and attitudes toward labor analgesia. Employed women were 1.62 times more likely to believe that labor pain should be managed compared to unemployed women (AOR: 1.62, 95% CI: 1.02–2.59). Additionally, income played a role, with women earning

50,000 ETB or more being 1.49 times more likely to have a favorable attitude toward labor analgesia than those with lower incomes (AOR: 1.49, 95% CI: 1.10–2.59). Parity and education were significantly associated with the desire for labor analgesia. Nulliparous women were less likely to believe in the need for labor pain treatment compared to parous women (AOR: 0.65, 95% CI: 0.28–0.93). Conversely, parous women were less likely to desire labor analgesia for their next delivery compared to nulliparous women (AOR: 0.38, 95% CI: 0.20–0.52). Educated women were significantly more likely to desire labor analgesia for their next delivery, being 4.27 times more likely to express this preference than those with no formal education (AOR: 4.27, 95% CI: 2.07–14.28).

CONCLUSION: Awareness of labor analgesia among pregnant women was low, highlighting significant gaps influenced by socioeconomic and educational factors. Collaborative efforts and targeted interventions are needed to improve attitudes and increase the desire for labor analgesia. Accessible healthcare policies can address these gaps, enhancing maternal care quality and improving childbirth experiences.

Keywords- Labor pain management / pregnant women / SPHMMC/ Addis Abeba

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LIST OF ABBREVIATIONS

SPHMMC	St Paul Hospital Millennium Medical College
OBGYN	Obstetrics and Gynecology
ACOG	American college of obstetrics and gynecology
ANC	Antenatal Care
CD	Cesarean Delivery

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INTRODUCTION

BACKGROUND

Since the dawn of time, humans have experienced pain, which is often seen as a negative phenomenon. It is a need for our way of life. It either indicates deteriorating health (in which case it is referred to as pathologic pain) or promotes the advancement of physiological processes occurring in the body, such as during labor. (1)

The pain experienced during labor is primarily caused by contractions of the uterus as it works to push the baby through the birth canal.(1) Labor pain is often described as intense, sharp, or cramping sensations in the lower abdomen and back. It can be accompanied by other discomforts such as pressure, stretching, and aching sensations. The pain can be continuous or come in waves during contractions, which can last for several hours.(2)

However, it is important to note that every woman's experience of labor pain is unique, and some women may have different perceptions or coping mechanisms to manage the pain. (1)Many pharmaceutical and nonpharmacological labor pain relief methods have been developed in high-income nations. Systemic opioids, nonopioids, epidural analgesia, spinal-epidural analgesia combined, inhalation drugs, pudendal block, transcutaneous electrical nerve stimulation, massage, acupuncture, water immersion, yoga, music therapy, biofeedback, continuous support, positioning, ambulation, hypnosis, and breathing technique are some of the techniques used to manage labor pain(3).

The use of these pharmaceutical and non-pharmacological labor pain relief methods has grown in popularity, especially in developed countries.(4) Regardless of race or religious beliefs, many women want pain medication during labor since it greatly improves their pleasure with the delivery process(5). Most women would agree that labor pain is the most excruciating type of agony they have ever felt. According to studies, women who are given analgesia during labor express more happiness with the entire birthing process.(5)

The worst pain a woman may feel when she is pregnant is labor pain(6). For both the woman and her fetus, untreated labor pain has a numerous negative consequence. (7) Good obstetric care

includes providing pain management throughout labor and delivery. "Labor produces substantial pain for many women. (2)

A woman's perception of pain relief during childbirth can be influenced by her level of knowledge about the birthing process. Some women may recognize the pain as a natural part of giving birth and view it as a positive indicator of progress. Consequently, some women may choose to decline pain relief, as they perceive the pain as an integral part of the labor experience, which brings a sense of achievement and even enjoyment(8)

This lack of knowledge and awareness about pain relief options can result in women choosing to endure the pain of childbirth without any form of relief(8). In some African cultures, for example, there may be a belief that experiencing the pain of childbirth is a natural and necessary part of the process, and women may feel pressure to endure it without medication. (8)

Women's opinions toward pain management may also be influenced by the delivery setting and the care given by the personnel. Healthcare professionals have a responsibility to make women's labor experiences as comfortable as feasible.(8)

Overall, a woman's perception of pain relief during childbirth can be influenced by her level of knowledge, cultural background, and personal beliefs. It is important for healthcare providers to provide accurate information and support to help women make informed decisions about their pain management during labor(8)

Unresolved previous emotional or physical trauma, loneliness, ignorance, and hostile or indifferent care during labor might increase the likelihood that the woman would experience pain.(9)

STATEMENT OF THE PROBLEM

According to The American College of Obstetricians and Gynecologists and the American Society of Anesthesiologists state, ‘There is no other circumstance where it is considered acceptable for an individual to experience untreated severe pain, amenable to safe intervention, while under physician’s care. In the absence of a medical contraindication, maternal request is a sufficient medical indication for pain relief during labor. (10)

Labor pain is a significant concern for pregnant women, and effective pain management during childbirth is crucial for ensuring a positive birth experience. Labor pain management, although approved and practiced in many nations throughout the world, in Ethiopia labor pain management is not a common practice. In a study done in Ethiopia, Gondar Records shows that only 8%, knew about labor pain management(7). A Various factor, including knowledge, attitude, socioeconomic factors, such as education level, income, and access to healthcare and cultural or societal influences could influence labor pain management, however, this is not investigated in our setting.

Understanding the knowledge and attitudes of pregnant women toward labor pain management is essential for providing patient-centered care and ensuring that their choices and preferences are respected. The findings of the study can inform healthcare policies and guidelines related to labor pain management.

Overall, conducting a study on knowledge, attitude, desire and associated factors about labor pain management among pregnant women is essential for

- Improving the birthing experience,
- Promoting patient-centered care, and
- Informing healthcare policies and guidelines

LITERATURE REVIEW

The literature on knowledge, attitude, desire and associated factors related to labor pain management among pregnant women is limited but growing. Several studies have explored these topics, providing valuable insights into the factors that influence pregnant women's approach to pain management during childbirth.

2.1 Knowledge of labor pain management

Previous research has highlighted the importance of educating pregnant women about labor analgesia to enhance their birthing experience and overall satisfaction with the childbirth process. A study conducted among pregnant women in a medical college hospital in India revealed that 90.50% of participants were unaware of labor analgesia.(11) Similarly, A cross-sectional study carried out at the Maternity and Children's Hospital in Najran, Saudi Arabia, revealed that 62.7% of participants were familiar with the concept of labor pain. Surprisingly, 58.7% of the total sample group had no knowledge about methods to relieve labor pain, and an even higher percentage, 79.8%, were unaware of the various options available for alleviating labor pain. (12)

In a cross-sectional descriptive study conducted in Uganda among women, it was found that only 7% of the participants had knowledge about labor analgesia. This means that most of the women (87.9%) did not receive any form of pain relief during their previous deliveries.(13) In a cross-sectional study conducted at Ahmadu Bello University Teaching Hospital in Zaria, Nigeria, 56% of participants were found to be knowledgeable about labor analgesia. The majority (34.8%) obtained their information from nurses. The most widely recognized methods of pain relief were music and hypnosis, accounting for 97.3% of responses.(14) Similarly In a prospective study conducted at Aga Khan University Hospital in Nairobi, Kenya, 56% of the participants demonstrated awareness of labor pain relief methods. At their last delivery, 18% of the participants were provided with some form of pain relief, and among those who received it, 82% reported effective pain relief. Despite the majority of participants being well-educated, their understanding of labor analgesia remained limited.(15)

During a cross-sectional study from February to March 2019, 410 pregnant women attending the antenatal care facility at the University of Gondar, Gondar, Ethiopia were included. The study found that 8% (33) of the participants had an awareness of labor analgesia.(7)

2.2 Attitude of labor pain management

The attitude of pregnant women toward labor pain management is an important determinant of whether they opt for labor analgesia during childbirth. Factors influencing these attitudes include cultural norms, socioeconomic status, educational background, and healthcare system practices.

In Europe, a study carried out in Finland among 1,000 pregnant women attending antenatal care clinics found that 85% of participants had a favorable attitude toward labor pain relief methods, with the majority citing the importance of pain management in ensuring a positive childbirth experience. The study also reported a high level of trust in healthcare providers to recommend suitable pain relief options (12)

In a descriptive study conducted at Cecilia Makiwane Hospital in South Africa, involving 151 women aged 18 years and older who attended antenatal care, most participants (78%) had no concerns about potential issues related to pain relief methods. However, a significant proportion (83.4%) expressed little or no confidence in the available labor pain relief options (8).

A cross-sectional study conducted at the University of Gondar in Ethiopia between February and March 2019, involving 410 pregnant women, revealed that government employees were 6.488 times more likely to have a positive attitude toward labor analgesia compared to farmers. Additionally, women aged 25–31 years were 1.815 times more likely to desire labor analgesia for their next delivery (7)

2.3 Desire for labor pain management

Labor analgesia is not widely practiced in developing countries due to multiple factors, including limited demand from patients, lack of enthusiasm among obstetricians and anesthesiologists to implement it routinely, inadequate equipment and resources, and low awareness among pregnant women (3).

A study conducted in a medical college hospital in India revealed that only 23% of pregnant women opted for labor analgesia when it was offered, reflecting prevailing attitudes toward labor pain management (11).

In Nigeria, a cross-sectional study at Ahmadu Bello University Teaching Hospital in Zaria found that 62.5% of participants desired pain relief during labor, with the primary barrier being the unavailability of pain management options. Similarly, a study at the University of Uyo Teaching Hospital reported that 81.4% of participants expressed a desire for labor pain relief in their next delivery, with ethnicity significantly associated with this preference (18). Likewise, a study in Nairobi, Kenya, indicated that 90% of participants intended to use some form of labor pain relief during their next delivery (20).

In Ethiopia, a cross-sectional study conducted at the University of Gondar between February and March 2019 involving 410 pregnant women attending antenatal care showed that 65.9% of the participants expressed a desire for labor analgesia in their next delivery (7).

2.4 Associated factors that affect labor pain management.

Several factors can influence a woman's experience of labor pain management. These include cultural beliefs and attitudes towards childbirth and pain, previous experiences with pain relief methods, education and knowledge about labor pain management options, the presence of a supportive support system, fear and anxiety about childbirth, birth plan preferences, healthcare provider recommendations, and the progression and intensity of labor. These factors can impact a woman's decision to use pain relief

A study conducted in a medical college hospital in India found that the most significant reason for refusal of labor pain management was the desire to experience natural childbirth. Many pregnant women expressed a strong preference for a "natural" birth experience, associating the pain of labor with a sense of achievement or spiritual significance. Additionally, the review revealed that the educational status of women, particularly those with graduate-level education, had a positive impact on their knowledge about labor analgesia. This finding suggests that higher levels of education may be associated with a better understanding of pain management options during childbirth. (11). In a separate research study conducted in India, the majority of participants (78%) were from rural areas, where access to education and resources is limited. The educational

level of the respondents was found to be poor, with 39% of them being illiterate and 36% having basic reading and writing skills. Additionally, a significant portion of the participants (76%) belonged to a low socio-economic group, indicating a lack of financial resources.(16) The study also revealed that there was minimal awareness (only 2%) among the participants about painless delivery options. However, after being provided with information about labor analgesia, which is a method to relieve pain during childbirth, a vast majority (90%) expressed their willingness to undergo a painless delivery experience. (16) Similarly A cross-sectional study conducted at the Maternity and Children's Hospital in Najran, Saudi Arabia found a notable correlation between educational level and the awareness and understanding of labor pain relief. Most pregnant women (57.5%) acquired information from friends, while only a small percentage (16.1%) received guidance from healthcare providers. (12)

In a cross-sectional descriptive study conducted in Uganda among women, it was found that the most common reason cited by women in Uganda for declining labor analgesia was a desire to undergo a natural childbirth experience.(13)

A cross-sectional study conducted from February to March 2019 at the University of Gondar in Ethiopia included 410 pregnant women receiving antenatal care. Of these participants, 33 (8%) were found to be aware of labor analgesia. In a multivariate analysis, the odds of having awareness of labor analgesia were 7.227 times higher among mothers who had given birth before compared to those who had not. Additionally, government employees were 3.133 times more likely to have awareness of labor analgesia compared to housewives.(7)

SIGNIFICANCE OF THE STUDY

Many pregnant women have limited knowledge about labor pain management options available to them. This lack of knowledge can lead to anxiety and fear about the birth process. By understanding their knowledge gaps, healthcare providers can develop educational programs to address these gaps and improve overall satisfaction with the birthing experience. Effective labor pain management techniques can have a significant impact on birth outcomes, including reduced maternal stress, improved maternal and neonatal well-being, and increased satisfaction with the birthing experience. Understanding the factors that influence a woman's attitude towards pain management can help healthcare providers tailor interventions that promote positive birth experiences. Attitudes towards labor pain management can vary widely across different cultures and societies. Factors such as cultural beliefs, social support, and previous experiences can influence a woman's decision-making process regarding pain management during labor. By identifying these factors, healthcare providers can offer culturally sensitive and personalized care to pregnant women.

OBJECTIVES

GENERAL OBJECTIVE

- To assess the knowledge, attitudes, and associated factors related to labor pain management among pregnant women attending ANC at SPHMMC, Addis Abeba, Ethiopia, September – October, 2024.

SPECIFIC OBJECTIVES

- To assess the level of knowledge about labor pain management among pregnant women attending antenatal care at SPHMMC.
- To determine the attitudes of pregnant women towards labor pain and its management among pregnant women attending ANC at SPHMMC.
- To determine the desire for labor analgesia among pregnant women and factors influencing this desire.
- To identify the factors associated with knowledge and attitudes toward labor pain management, such as socioeconomic status, education, occupation, and parity, among pregnant women attending antenatal care at SPHMMC.

METHODOLOGY

STUDY SETTING

The study was conducted at St. Paul's Hospital Millennium Medical College, located in Gullele Sub-city, Addis Ababa, Ethiopia. Although the medical college opened in 2007, the hospital itself was established in 1968 by the late Emperor Haile Selassie in collaboration with the German Evangelical Church and it is currently governed by a board under the Federal Ministry of health. In addition to an inpatient capacity of more than 700 beds, on average 1200 emergency and outpatient clients are seen daily in the hospital. It serves an average of 300,000 patients each year and has over 2,800 clinical, academic, administrative, and support staff.

The hospital has over 13 departments, including the Department of Obstetrics and Gynecology, which offers a comprehensive range of clinical services, including obstetric care. The OBGYN department hosts a postgraduate residency program and fellowship programs across five subspecialty areas. It also includes a Center of Excellence dedicated to promoting and providing reproductive health services, training, and research.

STUDY PERIOD

The study was conducted over a period of months in September and October 2024

STUDY DESIGN

A cross-sectional study was used to assess knowledge, attitude, desire, and factors associated with labor pain management among pregnant women attending ANC.

SOURCE AND STUDY POPULATION

SOURCE POPULATION

All pregnant women who visited Saint Paul's Millennium Medical College

STUDY POPULATION

Pregnant women who visited for antenatal care at Saint Paul's Millennium Medical College

INCLUSION CRITERIA

Pregnant women who visited antenatal care at Saint Paul's Millennium Medical College during the study period.

EXCLUSION CRITERIA

Pregnant women who needed emergency evaluation like those in labor or vaginal bleeding

SAMPLING METHODS

SAMPLE SIZE CALCULATION

To determine the sample size, a single population proportion formula was used based on a study done in Nigeria, which found that 56% of the participants had an awareness of labor pain relief methods. Considering this, with 95% confidence and a 5% margin of error, the sample size was determined:(14)

$$N=(Z\alpha/2)^2p(1-p)/d^2$$

$$N=(1.96)^2(0.56)(0.44)/(0.05)^2=378.62$$
$$=379$$

By considering a 10% non-response rate, the final sample size was 417.

SAMPLING TECHNIQUE

Convenience sampling was used to select study participants by taking every consecutive pregnant woman until the required sample size was reached.

DATA COLLECTION AND QUALITY MANAGEMENT

Data were collected using a questionnaire prepared from previous literature regarding awareness, attitude and desire for labor analgesia. One person collected the data, and one experienced person supervised the data collection. The questionnaire was translated in Amharic to collect data from the pregnant women. The study participants were selected consecutively.

STUDY VARIABLES

DEPENDENT VARIABLE

Knowledge of labor analgesia. Attitude toward labor analgesia

INDEPENDENT VARIABLES

Sociodemographic factors: Age, profession, level of education, residence, culture.

Obstetric factors: Parity, mode of previous delivery, place of previous delivery

DATA ANALYSIS

The data was initially collected using the Kobo toolbox. It was then coded, entered and analyzed using SPSS version 26. Descriptive analysis was computed in order to determine frequencies, mean, standard deviations, and percentages. The outcomes are displayed in tables and presented in figures.

In the analysis of the association between predictor variables and outcome variables, binary and multinomial analyses were carried out using a logistic regression model. The odds ratio at a confidence interval of 95% was used to compute the level of association and the p-value at less than 0.05 was considered as a cut-off point for statistical significance.

OPERATIONAL DEFINITION

Had good Knowledge: Women who said yes when asked if they had prior information about labor analgesia (17)

Had good attitude: Women who said yes when asked if labor pain should be treated(18)

Good desire: Women who said yes when asked if they desired labor analgesia for their next delivery (18)

ETHICAL CONSIDERATION

A formal approval letter for ethical clearance was obtained from the institutional review board of St Paul's Hospital Millennium Medical College. The information extracted was only that is required for the sole purpose of this study

DISSEMINATION PLAN

The findings of this study will be shared with the SPHMMC department of OBGYN for possible recommendations. It will be available for the college's research database for any future references and as a base for further related studies.

RESULTS

Sociodemographic Characteristics of Study Participants

A total of 417 questionnaires were collected, with all participants included, resulting in a 100% response rate. Over half (52.3%) of the participants were aged 25–30 years. A majority (47.2%) of the participants were orthodox. More than half (56.1%) had an education level of high school or below, while 35.2% had attained higher education. The majority were housewives (53.7%), and 95% of the women resided in urban areas (Table 1).

Table 1 Sociodemographic characteristics of pregnant women who visited the antenatal care facility at St Paul Hospital Millennium Medical College, Addis Ababa, September – October 2024 GC.

Variable	Frequency	Percentage
Age In years		
18-24	64	15.3
25-30	218	52.3
31 and Older	135	32.4
Religion		
Orthodox	197	47.2
Muslim	142	34.1
Protestant	78	18.7
Educational status		
Can not read and write	36	8.6
High School or Below	234	56.1
Some College/Associate Degree	131	31.4
Master's Degree	16	3.8
Occupation		

Student	5	1.2
Government employee	69	16.5
Private sector employee	56	13.4
Self-employed	63	15.1
Unemployed (Housewife)	224	53.7
Residence		
Urban	396	95
Rural	21	5

Obstetric Characteristics of the Study Participants

The majority of the women were parous (78.4%). In terms of previous delivery methods, 56% had undergone a cesarean section. Most deliveries took place at the national referral hospital (70.9%) (Table 2).

Table 2 Obstetric characteristics of pregnant women who visited the antenatal care facility at St Paul Hospital Millennium Medical College, Addis Ababa, September – October 2024 GC.

Variable	Frequency	Percentage
Partial status (n = 417)		
Nulliparous	90	21.6
Parous	327	78.4
Mode of previous delivery (n = 327)		
Vaginal Delivery	144	44
Cesarean section	183	56
Place of previous delivery (n = 327)		
At home	6	1.8
At health center	89	27.2
At national referral hospital	232	70.9

Knowledge of Labor Analgesia

Among 417 pregnant women, only 55 (13.2%) were aware of labor analgesia. Most of these women obtained information about labor analgesia from family and friends (25, 45.5%) or through the Internet and social media (23, 41.8%). Among those who were aware, the most commonly known method was injections in the lower back (22, 40%). Additionally, 23 women (41.8%) had learned about labor analgesia during their current pregnancy. Of the 55 women, only 5 (9%) had prior experience with labor analgesia (Table 3).

Table 3 Awareness of labor analgesia among pregnant women who visited the antenatal care facility at St Paul Hospital Millennium Medical College, Addis Ababa, September – October 2024 GC.

Question	Frequency	Percentage
Information about labor analgesia (n = 417)		
Yes	55	13.2
No	362	86.8

Question	Frequency	Percentage
When did you hear about pain relief? (n = 55)		
During current pregnancy	23	41.8
During previous pregnancy	18	32.7
During previous childbirth	14	25.5
Experience of pain relief methods (n = 55)		
Yes	5	9
No	50	91
Previous use of analgesia (n =5)		
Epidural analgesia/Spinal analgesia	1	20
Breathing techniques	4	80

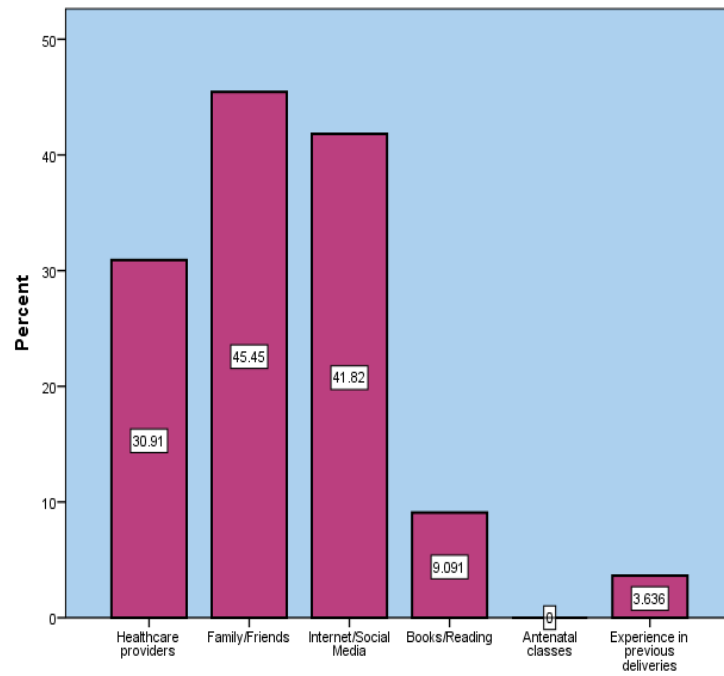


Fig. 1 -
Information
obtained from
about methods of
labor pain
management

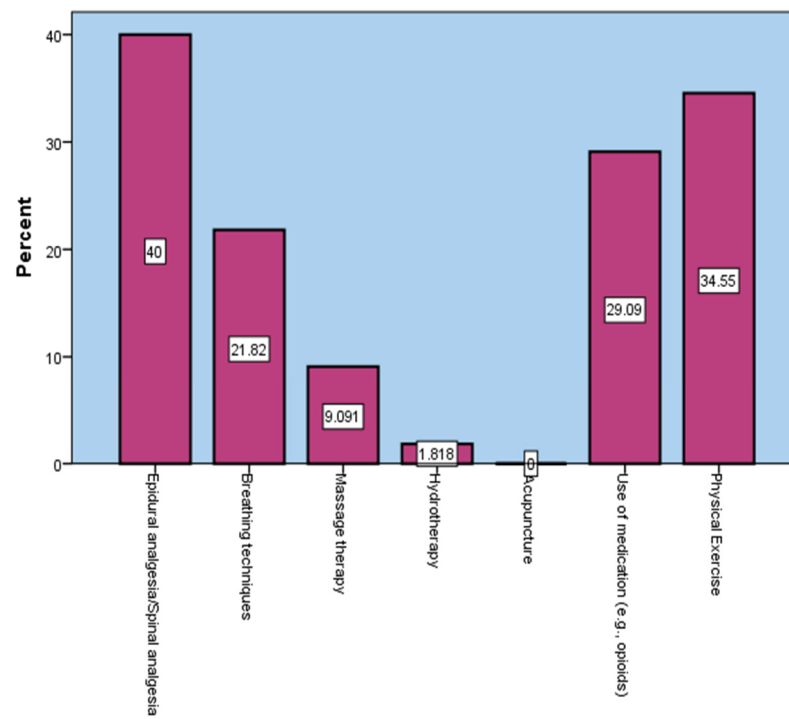


**Fig. 2 - Methods
of pain relief you
heard about**

Attitude and Labor Pain Expectation and Experience

Among 90 nulliparous women surveyed, 97.8% anticipated that labor would be painful. Of those who expected pain, 82.2% characterized it as severe, while 12.2% considered it moderate. Among the 327 women who had previously experienced labor, 62.1% described the pain as severe, and 22.3% rated it as moderate. In terms of attitudes, 72.9% of participants believed that labor should be pain-free (Table 4)

Table 4 Pain expectation, experience, and attitude among pregnant women receiving antenatal care (ANC) at St Paul Hospital Millennium Medical College, Addis Ababa, September – October 2024 GC.

Question	Frequency	Percentage
The expectation of labor (for nulliparous)? N =90		
No idea	2	2.2
Painful	88	97.8
Mild pain	3	3.4
Moderate Pain	11	12.5
Severe Pain	74	84.1
Categorizing labor pain. [for multiparous] N =327		
Pain-free	2	0.6
Mild pain	49	15
Moderate Pain	73	22.3
Severe Pain	203	62.1
Do you believe labor pain should be managed? N = 417		
Yes	304	72.9
No	113	27.1

Desire for Labor Analgesia

Among Pregnant Women, the majority (46%) of pregnant women did not want labor analgesia for their next delivery. Among the 27.1% of women who did not believe in labor analgesia, the commonest reason was that they wanted to experience natural childbirth (36.43%) (Fig. 1).

Why don't you believe labor should be managed

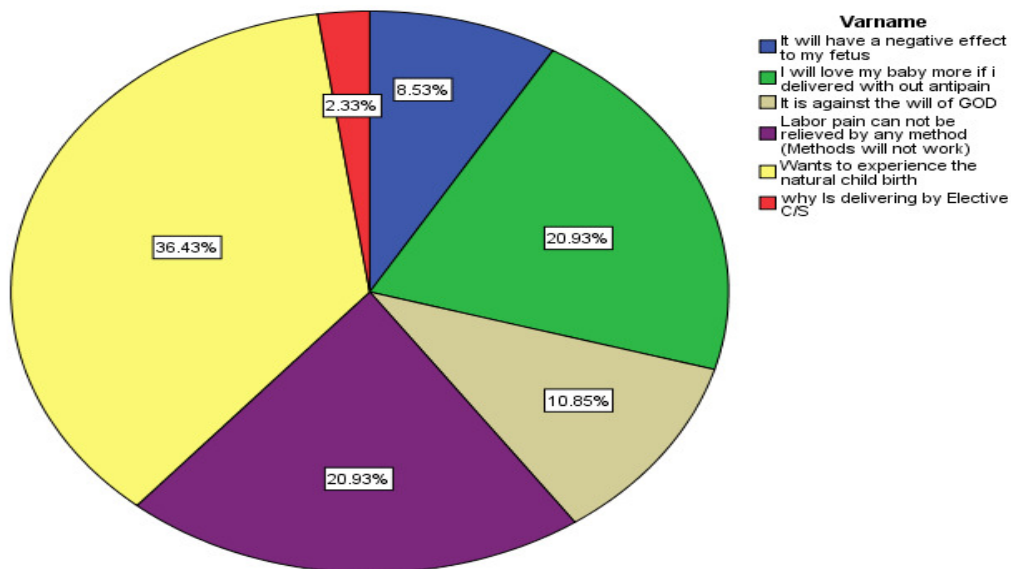


Fig. 3 Reason for refusal of labor analgesia for the next delivery among pregnant women receiving ANC at St Paul Hospital Millennium Medical College, Addis Ababa, September – October 2024 GC.

Factors Associated with Knowledge of Labor Analgesia

The likelihood of having Knowledge of labor analgesia was 1.9 times (AOR: 1.9, 95%, CI 1.07–2.33) greater among those with an income of 500 or more

Table 5 Factors associated with awareness of labor analgesia among pregnant women receiving antenatal care at St Paul Hospital Millennium Medical College, Addis Ababa, September – October 2024 GC.

Variable	Awareness status		COR (95% CI)	AOR	p-value
	Yes	No			
Age					
25 or more (1)	51(14.4%)	302(86.6%)	1	1	0.124
Less than 25	4 (6.25%)	60 (93.75%)	2.53 (0.88-7327)	2.305 (0.79-6.69)	
Occupation					
unemployed (students and unemployed) (1)	23 (10.04%)	206 (89.96%)	1	1	0.197
employed	32 (17.02%)	156 (82.98%)	0.54 (0.31-0.97)	1.49 (0.82-2.7)	
Income					
5000 or less	20 (9.17%)	198 (90.83%)	1	1	0.038
more than 5000	35 (17.59%)	164 (82.41%)	1.58 (1.07-2.33)	1.9 (1.04-3.48)	

Factors Associated with Attitude Towards Labor Analgesia

Parous women, compared to nulliparous women, were 0.65 times as likely to believe in labor pain treatments (AOR: 0.65, 95% CI: 0.28–0.93). Likewise, employed women were 1.62 times more likely to believe that labor pain should be managed (AOR: 1.62, 95% CI: 1.02–2.59). Additionally, the odds of having a good attitude toward labor analgesia were 1.49 times higher among women with an income of 5000 birr or more compared to those earning less (AOR: 1.49, 95% CI: 1.10–2.59) (Table 6).

Table 6 Factors associated with attitude towards labor analgesia among pregnant women receiving antenatal care at St Paul Hospital Millennium Medical College, Addis Ababa, September – October 2024 GC

Variable	Attitude status		COR (95% CI)	AOR	p-value
	Yes	No			
Age					
25 or more (1)	252 (71.39%)	101 (28.61%)	1	1	0.15
Less than 25	52 (81.25%)	12 (18.75%)	1.74 (0.89-3.39)	0.59 (0.29-1.2)	
Parity					
Nulliparous	74 (82.22%)	16 (17.78%)	1	1	0.027
Parous	230 (70.34%)	97 (29.66%)	0.51 (0.28-0.93)	0.65 (0.35-1.2)	
Occupation					
unemployed (students and unemployed) (1)	156 (68.12%)	73 (31.88)	1	1	0.043
employed	148 (78.72%)	40 (21.28%)	1.73 (1.10-2.71)	1.62 (1.02-2.59)	
Income					
5000 or less	148 (67.89%)	70 (32.11%)	1	1	0.009
more than 5000	156 (78.39%)	43 (21.61%)	1.72 (1.10-2.67)	1.49 (0.94-2.36)	

Factors Associated with Desire for Labor Analgesia

Parous women were 0.38 times as likely to desire labor analgesia for their next delivery compared to nulliparous women (AOR: 0.38, 95% CI: 0.20–0.52). In contrast, educated women were 4.27 times more likely to desire labor analgesia for their next delivery than those with no educational background (AOR: 4.27, 95% CI: 2.07–14.28) (Table 7).

Table 7 Factors associated with the desire for labor analgesia among pregnant women receiving antenatal care at St Paul Hospital Millennium Medical College, Addis Ababa, September – October 2024 GC

Variable	Attitude status		COR (95% CI)	AOR	p-value
	Yes	No			
Age					
25 or more (1)	147 (41.64%)	206 (58.36%)	1	1	0.40
Less than 25	36 (56.25%)	28 (43.75%)	0.79 (0.52-1.20)	0.78 (0.43-1.40)	
Parity					
Nulliparous	59 (65.56%)	31 (34.44%)	1	1	0.000236
Parous	124 (37.92%)	203 (62.08%)	0.32 (0.20-0.52)	0.38 (0.22-0.63)	
Education					
No education	5 (13.89%)	31 (86.11%)	1	1	0.004
Education of any level	178 (46.72%)	203 (53.28%)	5.44 (2.07-14.28)	4.27 (1.58-11.51)	
Occupation					
unemployed (students and unemployed) (1)	93 (40.61%)	136 (59.39%)	1	1	0.62
employed	90 (47.87%)	98 (52.13%)	1.34 (0.91-1.98)	1.11 (0.73-1.70)	
Income					
5000 or less	84 (38.53%)	134 (61.47%)	1	1	0.299
more than 5000	99 (49.75%)	100 (50.25%)	1.58 (1.07-2.33)	1.25 (0.82-1.90)	

Obstetric Characteristics and Cross Tabulation with Awareness, Attitude and Desire for Labor Analgesia

Among women with awareness of labor analgesia, 72.7% were parous, 60% had a vaginal delivery and 80% delivered at a national referral hospital. Regarding mothers who had a good attitude towards labor analgesia, 75.7% were parous, 58.3% delivered by cesarean delivery (CD) and 72.2% delivered at a national referral hospital. Among mothers who wanted labor analgesia for their next delivery, 67.8% were parous, 50.8% delivered by cesarean delivery (CD) and 65.3% delivered at a referral hospital (Table 8).

Table 8 Obstetric variables and their cross-tabulation for awareness, attitude and desire for labor analgesia among pregnant women receiving antenatal care at St Paul Hospital Millennium Medical College, Addis Ababa, September – October 2024 GC

Variable	Awareness status		Attitude status		Desire status		
	Yes	No	Yes	No	Yes	No	Unsure
Parity (N = 417)							
Nulliparous	15 (27.3%)	75 (20.7%)	74 (24.3%)	16 (14.2%)	59 (32.2%)	24 (12.5%)	7 (16.7%)
Parous	40 (72.7%)	287 (79.3%)	230 (75.7%)	97 (85.8%)	124 (67.8%)	168 (87.5%)	35 (83.3%)
Mode of delivery (N= 327)							
Vaginal	16 (40%)	128 (44.6%)	96 (41.7%)	48 (49.5%)	61 (49.2%)	67 (39.9%)	16 (45.7%)
CS	24 (60%)	159 (55.4%)	134 (58.3%)	49 (50.5%)	63 (50.8%)	101 (60.1%)	19 (54.3%)
Place of delivery (N= 327)							
At home	0	6 (2.1%)	1 (0.4%)	5 (5.2%)	1 (0.8%)	5 (3%)	0
At health center	8 (20%)	81 (28.2%)	63 (27.4%)	26 (26.8%)	42 (33.9%)	40 (23.8%)	7 (20%)
At referral hospital	32 (80%)	200 (69.7%)	166 (72.2%)	66 (68%)	81 (65.3%)	123 (73.2%)	28 (80%)

DISCUSSION

In this study, awareness of labor analgesia was low, with 13.2% (95% CI: 10–17%). In many developing countries, childbirth pain is often seen as natural and irremediable, with the idea of alleviating it through medication considered unnecessary or even contrary to traditional beliefs (7). This study assessed pregnant women's knowledge, attitudes, and desire regarding labor analgesia, and the findings were comparable to those of Nabukenya (Uganda) (7%), Naithani et al. (9.5%), Prakash et al. (Nepal) (7.14%), and a study in Gondar (8%) [17, 11, 25, 7]. However, awareness in our study was lower than in studies by Mugambe et al. (South Africa) (56.3%), Minhas et al. (76%), and Karuga et al. (India) (56%) [8, 19, 23]. This difference may be explained by the higher educational levels of participants in studies by Karuga et al. and Minhas et al. Additionally, the lower awareness in our study may reflect a view among participants that childbirth is primarily a physiological process, potentially stemming from a lack of education on pain management during antenatal visits.

Most participants 72.9% (95% CI: 68–77%) believed labor should be pain-free. This percentage is lower than the 87.8% reported in Uganda [17] but higher than the 48.3% found in South Africa [20]. It is also similar to the 74.1% reported in a study from Gondar [7]. Regarding expectations of labor pain, among the 90 nulliparous mothers, 97.8% anticipated that labor would be painful. In contrast, 2.2% had no expectations of labor pain, consistent with a study in Gondar, where 91.9% anticipated pain and 8.1% had no expectations of labor pain [7]. Among those who expected pain, 84.1% anticipated severe pain. Of the women who had previously experienced labor, 62.1% (95% CI: 9–15) described the pain as severe, which was lower than the 75.5% reported in Gondar [19].

Despite low awareness of painless labor, 43.9% (95% CI: 39.1–48.8) of participants expressed a desire for labor analgesia in their next delivery. This percentage is lower than that found in studies from Uganda (87.7%), Nepal (72.2%) [17, 25], and Gondar (65.9%) [7], but higher than the rates reported by Prakash et al. (16.43%) [19] and Yadav et al. (13.5%) [19]. The primary reason cited by women for not choosing labor analgesia was a desire to experience natural childbirth (36.43%). This aligns with findings from studies by Naithani et al., Olayemi et al.,

Prakash et al., and Nabukenya et al., where the most common reason for refusal (45% or more) was also a preference for natural childbirth [19, 17, 11, 20]. In contrast, in Gondar, the most frequently cited reason for declining analgesia was the belief that it was against God's will (35%) [7].

Regarding the source of information about labor analgesia, in this study, most participants received information about labor analgesia from family and friends (45.5%) and internet or social media sources (41.8%). This finding is similar to a study in Uganda, where 47% of participants obtained information from friends or family and 26% from previous labor experiences, but it differs from a South African study, where women primarily learned from previous experiences (56.5%) or friends and relatives (55.3%) [8, 17]. This reliance on family and friends may reflect a strong sociocultural value placed on sharing information within close circles. Additionally, the increasing use of technology has likely boosted the role of online resources. Among those aware of labor analgesia, 41.8% learned about it during their current pregnancy, which is lower than the 60.6% reported in Gondar [7] and the 80% reported by Prakash et al. [19].

Regarding the pain relief methods, most participants reported being informed about injection-based pain relief methods, such as spinal or epidural injections (40%). This result is consistent with findings from a study in Gondar (42.4%) and a South African study (32.9%) but is higher than a Nigerian study, where only 10% of participants were aware of epidural injections [7, 19]. Additionally, 34% of participants were aware that physical exercise could be used as a method for managing labor pain.

The present study found a significant association between awareness of labor analgesia and income, with women earning 5,000 or more being more likely to be aware of it (AOR: 1.9, 95% CI: 10.7–23.3) compared to those earning less than 5,000. This could be because higher-income women generally have better access to healthcare services and information. Additionally, they may have greater access to technology and the internet, which provide valuable resources about pain management options during labor.

This study also found no significant association between awareness of labor analgesia and educational status, which is consistent with the findings of Deogaonkar et al. (India) [24]. This

suggests that the level of awareness was low across all educational levels. Additionally, no association was found between awareness and age or religion, aligning with the results of Naithani et al. (India) [11].

This study found an association between occupation and women's attitudes toward labor analgesia; employed women were 1.62 times more likely to believe that labor pain should be managed (AOR: 1.62, 95% CI: 10.2%–25.9%). Similarly, a study in Gondar found that merchants (AOR: 7.757, 95% CI: 2.425–24.808) and government employees (AOR: 6.488, 95% CI: 1.894–22.227) were more likely to support labor pain management [7]. This difference may be influenced by a cultural belief that tolerating labor pain demonstrates emotional strength, a perception that may be less influential in some professional groups, though this belief lacks empirical support.

This study found that nulliparous women were 65% times as likely to believe in labor pain treatment (AOR: 0.65, 95% CI: 28%–93%). In contrast to studies conducted in Gondar [7] and in India by Shidhaye et al. and Yadav et al. [24, 19], no association was found between parity and attitudes toward labor pain management. This might be explained by cultural differences and differences in healthcare access and education.

Additionally, the present study found a significant association between a positive attitude toward labor analgesia and income. Women earning 5,000 or more were 1.49 times more likely to have a favorable attitude toward labor analgesia compared to those with lower incomes (AOR: 1.49, 95% CI: 11.0–25.9). This could be because higher income levels in this study were linked to increased knowledge about labor pain management, which in turn contributed to a more positive attitude toward analgesia.

In studies by Nabukenya et al. and Prakash et al., multiparity was positively associated with acceptance of labor analgesia, similar to the present study, which showed Parous women were 38% times as likely to desire labor analgesia for their next delivery compared to nulliparous women (AOR: 0.38, 95% CI: 20–52).[19, 17].

Similar to findings by Nabukenya et al. [13] and Shidhaye et al. [19], this study found no association between age and the desire for labor pain management. However, educated women were 4.27 times more likely to desire labor analgesia for their next delivery compared to those

with no formal education (AOR: 4.27, 95% CI: 2.07–14.28). This could be attributed to the fact that education enhances awareness of labor pain relief options, encouraging educated women to seek information about labor analgesia and understand its benefits. Additionally, educated women may have better access to resources or social networks that provide information on pain management, shaping their preferences.

STRENGTH OF THE STUDY

A key strength of this study is that it is the first to be conducted at St. Paul's Millennium Medical College, focusing on the knowledge, attitudes, desires, and associated factors related to labor pain management. The study provides valuable insights into these factors, offering a foundation for future research and interventions aimed at improving awareness and attitudes toward labor analgesia in this context.

LIMITATIONS OF THE STUDY

This study excluded mothers who were in active labor, which might have influenced the demand for labor analgesia. Additionally, the use of a questionnaire translated by the investigators could have affected participants' response patterns. Furthermore, the findings are limited to women attending a single institution, potentially restricting the generalizability of the results.

CONCLUSION

Awareness of labor analgesia among pregnant women was found to be low. Collaborative efforts by all stakeholders in the health sector are essential to improve attitudes and enhance the desire for labor analgesia among antenatal care attendees. This study underscores significant gaps in awareness and highlights the influence of socioeconomic and educational factors on attitudes and preferences toward labor analgesia. Targeted interventions and the implementation of accessible healthcare policies are crucial to addressing these gaps, ultimately improving maternal care quality and enriching childbirth experiences for women.

RECOMMENDATIONS

Broader studies across a wider geographic area are recommended to provide a clearer national perspective on knowledge, attitudes, and desires regarding labor pain management. The findings highlight the importance of comprehensive antenatal education programs to bridge knowledge gaps and support informed decision-making about labor analgesia. Efforts should prioritize low-income, unemployed, and less-educated women, who may encounter barriers to accessing information and services. Furthermore, implementing policies to improve the accessibility and affordability of labor analgesia can help reduce socioeconomic disparities and enhance maternal satisfaction.

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ANNEXES

INFORMATION SHEET

Purpose of the research:

Greetings,

My name is Dr. Bezawit Berhane. First, I would like to thank you for your time. You are invited to participate in a research study examining knowledge, attitude, desire, and factors associated with labor pain management among pregnant women attending ANC at Saint Paul's Hospital Millennium Medical College. The study aims to assess knowledge, evaluate attitudes, understand desires and preferences, and identify factors associated with labor pain management.

Participation:

Participation in this study is voluntary. If you choose to participate, you will be asked some questions about your socio-demography, professional background, and reproductive history. You do not need to provide your name, and all your responses are completely anonymous. The study is expected to take approximately ten minutes.

Risk and /or discomfort:

There is no risk in participating in this study. By participating, you will sacrifice your time only. The survey will take about ten minutes.

Benefits:

There are no direct benefits for you from participating in this study. However, your participation is likely to help us meet the research objective and improve the quality of care we provide.

Incentives/payments for participating:

You will not be provided with any incentive or payment to take part in this study.

Confidentiality:

The data collected in this study are completely anonymous. No personally identifiable information will be collected and the information you choose to provide in this study cannot be connected back to you. No online identifiers such as name, email address, IP address, or username will be collected. Your survey answers will be stored initially on Google Drive in a password-protected electronic format. Data will later be downloaded and stored on a password-protected computer. Data will be kept confidential and will not be revealed to anyone except the study team. Results from this study may be published or presented at research conferences.

Right to ask questions:

If you have any questions or comments about this study, you may contact the researcher using the contact details provided below.

Right to refusal or withdrawal:

You have the full right to refuse to participate in this research. You also have the full right to withdraw from this study at any time you wish.

Person to contact:

This research was reviewed and approved by the IRB of Saint Paul's Hospital Millennium Medical College.

In case you need more information about the study you can contact: -

Name: - Dr. Bezawit Berhane

Tel: - +251920153187

Email: - bezawit.berhane@gmail.com

Informed consent:

I have read and understand the above consent form and agree to participate in the study.

1. Yes 2. No

QUESTIONNAIRE

Section A: Demographic Information

1. Age:

2. Education Level:

- a) Can not read and write
- b) High School or below
- c) Some College/associate degree
- d) Master's Degree
- e) Doctorate or Professional Degree

3. Occupation:

- a) Student
- b) Government employee
- c) Private sector employee
- d) Self-employed
- e) Unemployed (Housewife)

4. Religion

- a) Orthodox
- b) Muslim

- c) Protestant
- d) Catholic
- e) Other (Specify)_____

5. Do you have any children

- a) Yes
- b) No

6. How many Children do you have?

7. Mode of previous delivery

- a) Vaginal Delivery
- b) Cesarean Delivery

8. Place of previous delivery

- a) At home
- b) At health center
- c) At referral hospital
- d) At Private Hospital

9. Place of Residence:

- a) Urban
- b) Rural

10. Income Level (Monthly):

- a) Under 1,000
- b) 1,000 - 5000
- c) 5001 - 10,000

- d) 10,001 - 25000
- e) 25001 and above

Section B: Knowledge on Labor Pain Management

11. Do You know about Labor pain management

- a) Yes, I do.
- b) No, I don't.

12. When did you hear about labor pain relief?

- a) During the current pregnancy
- b) During previous pregnancy
- c) During previous childbirth

13. Which of the following labor pain management methods are you aware of?

(Select all that apply)

- a) Epidural analgesia/Spinal analgesia
- b) Breathing techniques
- c) Massage therapy
- d) Hydrotherapy
- e) Acupuncture
- f) Use of medication (e.g., opioids)
- g) Physical exercise
- h) Other (please specify) _____

14. How did you learn about labor pain management methods?

(Select all that apply)

- a) Healthcare providers
- b) Family/Friends
- c) Internet/Social Media
- d) Books/Reading
- e) Antenatal classes
- f) Experience in previous deliveries
- g) Other (please specify) _____

15. Do you have experience with pain relief methods?

- a) Yes
- b) No

16. If "Yes" Where was the place of delivery

- a) At home
- b) At health center
- c) At referral hospital
- d) At Private Hospital

17. Which type of analgesia have you used before?

- a) Epidural analgesia/Spinal analgesia
- b) Breathing techniques
- c) Massage therapy
- d) Hydrotherapy
- e) Acupuncture

f) Use of medication (e.g., opioids)

g) Other (please specify) _____

Section C: Attitude Toward Labor Pain Management

18. What is your expectation (for nulliparous women)?

- a) No idea
- b) Pain-free
- c) Mild Pain
- d) Moderate Pain
- e) Severe Pain

19. On which scale do you categorize labor pain?

[for those with previous experience]

- a) Pain-free
- b) Mild Pain
- c) Moderate Pain
- d) Severe Pain

20. Do you believe labor pain should be managed?

- a) Yes
- b) No

21. If "No" Why?

- a) It will have a negative effect on my fetus
- b) I will love my baby more if I deliver with out antipain
- c) It is against the will of GOD
- d) Labor pain cannot be relieved by any method (Methods will not work)
- e) Wants to experience the natural childbirth
- f) Is delivering by Elective C/S
- g) Other (Specify) _____

23. Have you attended antenatal classes that included information on labor pain management?

- a) Yes
- b) No

24. If yes, how helpful were the antenatal classes in shaping your knowledge and attitude toward labor pain management?

- a) Very helpful
- b) Somewhat helpful
- c) Neutral
- d) Not very helpful
- e) Not helpful at all

25. Would you consider using pain relief methods in future childbirths based on your current knowledge and attitude?

- a) Yes
- b) No
- c) Unsure

Section E: Additional Comments

26. Do you have any additional comments or concerns regarding labor pain management that you would like to share? (Open-ended)